

## REPLY

The Examiner rejected claims 1-5, 11, 13-16 and 18-22 under 35 USC §103(a) as being unpatentable over Wyndham et al in view of Shurgan et al.

However, the Examiner indicated that claims 6-10, 12 and 17 are allowed.

Dependent claim 12 has been amended to independent form. Dependent claim 17 has also been amended to independent form.

In rejecting the claims, the Examiner conceded that Wyndham et al does not teach a germicidal lamp comprising a non-uniform contour capable of creating turbulent flow. However, the Examiner has indicated that it would have been obvious to one of ordinary skill in the art at the time of the invention that the cylindrical low pressure discharge lamp and spiral distributor of Wyndham could be replaced with a germicidal lamp with a non-uniform surface contour, as taught by Shurgan et al. The rationale advocated by the Examiner for this combination was that this would be desirable because the grooved lamp would be much easier to clean than the lamp and spiral distributor of Wyndham et al.

The Examiner's combination of references is respectfully rebutted. There is no motivation whatsoever disclosed in the

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references cited by the Examiner that supports the combination relied upon by the Examiner.

Wyndham et al discloses a portable purification device with a radiation lamp used as a source of germicidal rays. Untreated fluid travels through a spiral path formed by the annular space between the cylinder wall of the chamber and a concentric transparent cylinder as guided by the spiral distributor. After numerous spirals in turbulent motion around the tube, the sterilized fluid leaves the chamber.

Shurgan et al discloses a fluorescent lamp with grooves. The purpose of the grooves is to increase the lumen output of the lamp. Due to the presence of the grooves, at least a portion of the arc stream tends to travel a generally sinuous path along the length of the envelope where the grooves exist. This increases the arc stream length.

The grooves in the lamp disclosed in Shurgan et al are for a completely different purpose than the spiral distributor disclosed in Wyndham et al. Therefore, there would be no motivation whatsoever to combine the lamp disclosed in Shurgan et al with a fluid purification apparatus utilizing germicidal radiation as disclosed in Wyndham et al. Even if the fluorescent lamp disclosed in Shurgan et al were used in the device disclosed in Wyndham et al, the grooves in the fluorescent lamp would not contact the fluid being purified because the UV radiation lamp 16

is contained within the transparent tube 19. Therefore, even if the references are combined as advocated by the Examiner, the present invention would not be formed. Therefore, claim 1 should be allowable.

Claim 11 recites a chamber for containing a fluid to be purified and an ultraviolet lamp comprising an exterior non-uniform surface contour placed within said chamber. As indicated above, there is no motivation in the references cited by the Examiner that suggests providing or creating turbulent flow with an ultraviolet lamp having an exterior non-uniform surface contour. Therefore, there would be no motivation to combine a lamp having a groove for the purpose of increasing the lumen output of the lamp with a purification device for fluids as disclosed in Wyndham et al. Therefore, claim 11 should be allowable.

Claim 16 recites an air purification system comprising an ultraviolet lamp having an exterior non-uniform surface contour. There is no motivation in the references cited by the Examiner that suggests an air purification system utilizing an ultraviolet lamp having an exterior non-uniform surface for creating turbulent flow.

Dependent claim 21 additionally recites a blower, said blower moving air over said ultraviolet lamp. None of the

references cited by the Examiner disclose a blower moving air over an ultraviolet lamp having an exterior non-uniform surface.

Similarly, claim 22 recites a method of purifying a fluid having a flow and placing within the fluid flow an ultraviolet lamp comprising an exterior non-uniform surface contour. None of the references cited by the Examiner disclose an exterior non-uniform surface contour associated with an ultraviolet lamp placed in a fluid for the purpose of purifying the fluid. The lamp having grooves along its length disclosed in Shurgan et al, cited by the Examiner, is for a completely different purpose, that of increasing lumen output, and provides no motivation whatsoever for using such a fluorescent lamp in a fluid purification system or for creating turbulent flow.

New claim 23 has been added to more particularly recite an embodiment of the present invention. Claim 23 recites a tubular envelope having an exterior non-uniform surface contour placed over a cylindrical ultraviolet lamp. Claim 23 additionally recites at least one end cap placed on the tubular envelope sealing the cylindrical ultraviolet lamp within the tubular envelope wherein the fluid to be purified cannot enter between said cylindrical ultraviolet lamp and the tubular envelope.

It is noted that a second Information Disclosure Statement was filed June 23, 2003, citing references referred to in the

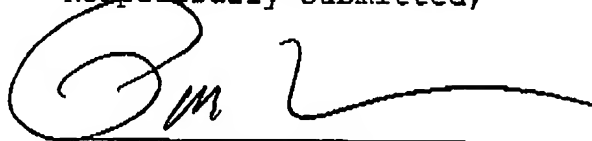
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European Search Report for a corresponding European patent application.

Accordingly, it is respectfully requested that the Examiner reconsider the present application to indicate additional allowable subject matter.

Respectfully submitted,



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